

COST-BENEFIT ANALYSIS

The Proposed Rule (36 CFR 219) for
National Forest Land and Resource Management Planning

USDA Forest Service

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Cost-Benefit Analysis

The Proposed Rule (36 CFR 219) for National Forest Land and Resource Management Planning

Executive Summary

The Forest Service is proposing new regulations to improve the process of establishing, amending, and revising land and resource management plans for the National Forest System. The proposed rule significantly simplifies the requirements of the 2000 regulation while retaining the emphasis on sustainability, monitoring and evaluation, collaboration, and use of science.

This analysis identifies the economic costs and benefits associated with the proposed revisions to the National Forest System Land and Resources Management Planning regulations (36 CFR part 219). The Forest Service is proposing changes to the planning rule published November 9, 2000 (the 2000 regulation). The 2000 regulation was intended to replace/update the 1982 NFMA regulations. The changes in this proposed rule are in part, a result of a review of the 2000 regulation conducted by Forest Service personnel at the direction of the Department of Agriculture. The review identified serious concerns regarding the agency's ability to implement the 2000 regulation. The review also found that the 2000 regulation failed to clarify the programmatic nature of land and resource management planning. The proposed rule is intended to build and improve upon the 1982 and 2000 regulations.

This analysis uses information from a report entitled "*A Business Evaluation of the 2000 and Proposed NFMA Planning Rules*" (April 2002), produced by the Inventory and Monitoring Institute of the Forest Service, with the assistance of Business Genetics, a consultant in Englewood, CO which specializes in business modeling. This report is hereafter identified as the "2002 NFMA Costing Study", or simply as the "costing study." The study uses a business modeling process to compare the anticipated costs of the 2000 regulation and the 2002 proposed rule.

This cost-benefit analysis focuses on key activities in land and resource management planning for which costs could be estimated under the 1982 rule, 2000 rule and proposed rule. Those major activities included regional guides, collaboration, science support, evaluation of the sustainability of decisions and diversity requirements under the NFMA, and the resolution of disputes regarding plan decisions through the administrative processes of appeals and objections. This analysis does not estimate the trends in planning complexity or costs not associated with the changes in the planning rule. It compares the differences between the 2000 regulation and the proposed 2002 rule based on findings from the costing study. It further compares these two rules to the 1982 regulation, as modified by current practices. Information taken from a recent report to Congress on planning costs along with empirical data and inferences from the costing study were used to approximate costs under the 1982 regulation.

The primary economic effects of the proposed rule are reported in the form of increased costs or cost savings in developing and revising land and resource management plans. The effects do not include the cost of implementing plans. These effects, summarized in the following table, identify the estimated cost changes for key planning activities. The 2000 regulation has an estimated annual average cost of \$26 million more than the 1982 regulation. The proposed 2002 rule has an annual average cost savings of \$30 million for option 1, and an annual average cost savings of \$25 million for option 2, when compared to the 2000 regulation.

The 2000 regulation has greater costs associated with broadscale assessments, independent scientific peer review, scientific advisory boards, and other means to evaluate the consistency and application of science. The 2000 regulation has fewer costs than the 1982 regulation, associated with the 2000 regulation's lack of regional guides and its providing for a pre-decisional objection process rather than an appeal process for resolving disputes over plan decisions. The proposed 2002 rule decreases costs when compared to the 2000 regulation by reducing the length of time spent on the planning process; by providing discretionary flexibility to the Responsible Official regarding the depth and level of analysis needed to support the decisions being made.

There will be no effects on local economies and small business entities as a result of the proposed rule. The proposed rule is programmatic in nature and does not make site-specific, on-the-ground decisions. The planning rule provides direction to Forest Service personnel on how to develop, revise and maintain land and resource management plans pursuant to the National Forest Management Act and other laws and regulations. The proposed rule also does not establish a specific level of resource outputs. Direct effects on the level of goods, services, and uses produced by National Forest System lands are not estimated. These are the end-results of implementing plans and are beyond the scope of the proposed rule and this accompanying analysis.

Based on the quantified analysis for the three rules, an estimated annual average undiscounted costs for the proposed rule option 1 is roughly \$3.4 million less than the 1982 rule; for option 2, about \$1.2 million more than the 1982 rule; and for the average of these 2 options, about \$1.1 million less than the 1982 rule. The total discounted costs for the 15-year cycle are: for option 1, 30 million less, and for option 2, \$13 million more than the 1982 rule. When compared the proposed 2002 rule to the 2000 rule, the annual average undiscounted costs for the proposed rule option 1 is estimated to be about \$30 million less than the 2000 rule and for option 2, it is estimated to cost about \$25 million less than the 2000 rule. The total discounted costs for the 15-year cycle for option 1 are estimated to be about 262 million less than the 2000 rule and for option 2, \$218.8 million less than the 2000 rule. Note that the cost estimate for option 2 reflects the fact that it has more explicit process steps and there is some degree of uncertainty regarding rule application because it is a newer approach. Some of this cost difference could change with the final planning rule.

The most apparent potential improvements for planning are found in the proposed rule in the form of additional flexibility and discretion for the Responsible Official in deciding the form of collaboration, analysis, science support, and sustainability/diversity assessment needed to support the decisions to be made in the development, revision, or amendment of plans. This should allow planners to avoid planning procedures deemed unnecessary on a case-by-case basis, therefore increasing economic efficiency. In particular, the "vision" of planning, discussed in the preamble to the plan, is for a plan to be supported by a more focused analysis than is currently practiced. If analysis is made more proportional to the decisions made in a plan, substantial additional cost savings could occur. The rule also clarifies circumstances under which an environmental impact statement (EIS) would be required to document a plan analysis. It is likely that use of an EIS would be very unusual. There is no credible information available to estimate cost savings if a plan were to be documented in Categorical Exclusion or an Environmental Assessment instead of an EIS, but marked savings are likely to occur.

Numerous non-quantifiable benefits are expected to result from the proposed 2002 rule. These are discussed for each planning activity. The overall goal of the proposed rule is more

clearly founded on the Multiple-Use Sustained-Yield Act (MUSYA) and better describes the relationship of MUSYA to sustainability. This feature more clearly defines agency responsibilities to weigh and balance uses of National Forest System lands, for the benefit of the American people. The proposed rule will be based on a stronger emphasis on working with the public, other federal agencies, Federally recognized Indian Tribes, and others, and should result in more social satisfaction with agency efforts and management. The incorporation of ecologically-based management principles, improved monitoring and evaluation, integration of science, should result in a flexible process that reduces the burden on both the public and the agency. An efficient planning process that addresses public concerns and leads to improved health of public lands has value beyond the cost savings estimated in the analysis. Therefore, it is highly likely that the proposed rule is beneficial to the public interest.

Table S-1 - Summary of Estimated Savings/Costs of the Three Rules

Planning Process Requirements	1982 Rule Description/ Annual Cost	2000 Rule Description/ Annual Cost	Proposed 2002 Rule Description/ Annual Cost	Average Annual Savings/ Cost 1982 Rule to 2000 Rule	Average Annual Savings/ Cost 2000 Rule to Proposed 2002 Rule
Regional Guides	Regional Guides Required \$747,000	Regional Guides Not Required \$0	Regional Guides Not Required \$0	Regional Guides Eliminated \$747,000	No Difference
<u>1/</u> Collaboration, Analysis of Current, ID of Issues, Public Notice	Included in "Revise Plan"	\$39,688,000	\$25,632,000	(\$39,688,000)	\$14,056,000
<u>2/</u> Science Support	Included in "Revise Plan"	\$7,785,000	\$3,449,000	(\$7,785,000)	\$4,336,000
Analyze Effects, Develop Decisions, Document the Plan	Included in "Revise Plan"	\$32,720,000	\$27,241,000	(\$32,720,000)	\$5,479,000
Assess Decisions for Sustainability and Diversity Requirements:		\$22,466,000		(\$22,466,000)	
Cost under proposed Option 1	Included in "Revise Plan"		\$16,290,000		\$6,176,000
Cost under proposed Option 2	Included in "Revise Plan"		\$20,905,000		\$1,561,000
Average cost of proposed Options 1 and 2	Included in "Revise Plan"		\$18,597,000		\$3,868,000
Revise Plan	\$73,874,000			\$73,874,000	
Consider and Resolve Appeal/ Objection	\$2,442,000	\$975,000	\$1,022,000	\$1,467,000	(\$47,000)
Savings (Cost): Under proposed Option 1	\$77,063,000	\$103,634,000	\$73,633,000	(\$26,571,000)	\$30,001,000
Under proposed Option 2			\$78,248,000		\$25,386,000
Under average of proposed Option 1 and 2			\$75,941,000		\$27,693,000

Note:

1/ Includes 2002 Cost Centers for Collaboration, Public Notification, and Identifying Issues.

Does not include the cost for Broad Scale Assessments for the 2000 regulation, which now appear in the Assess Decisions for Sustainability and Diversity Requirements Activity.

2/ Includes the costs for Broad Scale Assessments for both the 2000 rule and the proposed 2002 rule.

Cost-Benefit Analysis

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Introduction

The Forest Service is responsible for managing the lands and resources of the National Forest System (NFS), which includes 192 million acres of land in 44 States, Puerto Rico, and the Virgin Islands. The system is composed of 155 National Forests, 20 National Grasslands, and various other lands under the jurisdiction of the Secretary of Agriculture (the Secretary). According to the Multiple-Use Sustained-Yield Act of 1960 (MUSYA) (16 U.S.C. 528) and the National Forest Management Act of 1976 (NFMA)(16 U.S.C. 1600 et seq.), the National Forest System lands are to be managed for a variety of uses on a sustained-yield basis to ensure a continued supply of products and services in perpetuity.

The NFMA guides land management planning for NFS lands. It directs the Secretary to develop, maintain, and, as appropriate, revise land and resource management plans for units of the National Forest System, and sets forth the requirements for doing so. During the 26 years since enactment of NFMA, much has been learned about land and resource management planning. Yet, many controversial issues regarding the appropriate short- and long-term use of national forests and grasslands remain. Some advocates of land and resource management planning believed it would lead to resolution of the issues associated with the management of natural resources. It has not. Difficult issues remain among competing interests. Land and resource management planning and decisionmaking cannot be expected to resolve all problems. However, improved planning procedures can more fully engage the public and improved public participation in decisionmaking. The emphasis of the 2000 regulation and the proposed 2002 rule on collaboration, use of science, and monitoring and evaluation will contribute to the long-term sustainability and health of NFS lands.

In March 1989, the Forest Service initiated a comprehensive review of its land and resource management planning process. Results of the review were published in May 1990, in a summary report entitled "*Synthesis of the Critique of Land Management Planning*" (Vol. 1), accompanied by ten other more detailed reports. The 1990 Critique documented lessons learned since passage of the NFMA and adoption of initial plans under that law. The 1990 Critique provided recommendations to improve planning and the management of national forests and grasslands and to more effectively engage the public in addressing future natural resource management challenges.

On February 15, 1991, the Forest Service published an Advanced Notice of Proposed Rulemaking (56 FR 6508) that included preliminary regulatory text revising the existing planning rule. Four public informational meetings were held to explain and discuss ideas for revising the planning procedure. Over 600 individuals and several groups submitted written comments. These comments were used in the development of a proposed rule published on April 13, 1995 (60 FR 18886).

A substantial number of public comments were received on the proposed rule, generally expressing dissatisfaction with proposed changes in the planning process. In part, as a result of public concern with changes proposed, the Secretary elected not to proceed with this proposal.

In December 1997, the Secretary convened a 13-member Committee of Scientists to review the Forest Service planning process and to offer recommendations for improvements. Their findings, which served as a partial basis for the 2000 rule and subsequently the proposed rule, was documented in *Sustaining the Peoples Lands*, March 1999.

A revised National Forest System Land and Resource Management planning regulation was published in the Federal Register November 9, 2000. Since then, a number of groups and organizations have identified significant problems and concerns associated with the implementation of the 2000 planning regulation, and requested the Department to review the regulations. In addition, lawsuits have been filed challenging the legality of the 2000 regulation. The Department, with the assistance of the Forest Service's Inventory and Monitoring Institute and a consultant (Business Genetics), conducted a review of the 2000 regulation to identify areas where additional work might be needed to ensure effective implementation. In addition, a review of the 2000 regulation was conducted by a team of agency employees with significant experience in planning and other aspects of Forest Service natural resource management. Both reviews identified serious concerns regarding the agency's ability to implement the 2000 planning regulations. The Department directed the agency to develop an organizational approach to resolve the major concerns identified in the reviews of the rule. An interim rule to modify the transition language in Section 219.35 of the 2000 regulation was published in the Federal Register on May 17, 2001, to allow plan revisions and amendments to be initiated and completed using the 1982 planning regulations.

Although the Forest Service continues to support the basic goals of the 2000 regulation, some parts are not clear and some requirements are too expensive, time consuming, or ask for commitments from others may not be realistic or feasible.

Section 6 of the NFMA specifies the requirements for the regulations that guide NFS planning. The provisions of this rule implement the NFMA by establishing requirements for the development, amendment, and revision of land and resource management plans and the monitoring and evaluation of the results of land and resource management. The proposed rule is the culmination of an effort to revise and focus planning procedures for the NFS. The intended effects are to simplify, clarify, and improve the planning process; to reduce burdens of unnecessary procedural requirements to the agency; and to strengthen coordination with interested and affected people in all phases of NFS planning.

Purpose of the Analysis

This analysis identifies the costs and benefits associated with developing, maintaining, and revising National Forest System plans under the proposed 2002 rule. It uses the 2002 NFMA Costing Study and other data to compare the major cost centers and the anticipated changes in planning costs with those required by the 1982 and 2000 planning regulations (36 CFR 219) with the proposed rule.

This analysis and report were done according to the direction given in OMB Guidelines to Standardize Measures of Costs and Benefits and the Format of Accounting Statements (Office of Management and Budget Memorandum 00-08) and Economic Analysis of Federal Regulations Under Executive Order 12866 (Best Practices Guidance) (1/11/96).

Effects Included in the Analysis

This analysis focuses on the Forest Service's financial costs for key planning activities for the NFS. It examines changes in the proposed rule that significantly alter current planning processes and requirements resulting in cost savings or cost increases. Cost changes are measured in terms of time and budget expenditures. There will be no effects on local economies and small business entities as a result of the proposed rule, although there may be increased satisfaction with planning and with the Forest Service if planning can be done more efficiently. The proposed rule is programmatic in nature and does not make site-specific, on-the-ground decisions. There will be no effects until decisions are made implementing the forest, grassland, or prairie plans. The proposed rule provides directions for the Forest Service personnel on how to develop and maintain land and resource management plans pursuant to the NFMA and other laws and regulations. It imposes no requirements on other government agencies, the public or private businesses. The proposed rule also does not establish a specific level of resource outputs. Direct effects on the level of goods, services, and uses produced by NFS lands are not included in this analysis. These are the end-results of plans and are beyond the scope of the proposed rule and this accompanying analysis.

Effects Not Quantified in the Analysis

The proposed rule is designed to provide a variety of beneficial effects. Many of these effects are not readily quantified in financial terms. The emphases on the ecological, economic, and social components of sustainability, collaborative citizen participation and building of trust and credibility, and science support provide a framework for increasing public knowledge and understanding of NFS lands and natural resources. The intended result is to provide a framework to foster stewardship of these lands and improve the likelihood of achieving the contribution toward the ecological, social, and economic components of sustainability. These benefits are found in better decisions and greater public support of forest and grassland plans and projects, healthy forest and rangelands, and sustainable supplies of goods and services.

A key element of the proposed rule is emphasis on collaboration as a means to encourage broader public participation in the planning process. The rule provides for regular and sustained involvement of other federal natural resource agencies, tribal governments, state and local governments, interested organizations, and the public in a continuing process of discussion and collaboration.

Another key element in the proposed planning process is the consideration of science in planning. The proposed rule requires use of the best available science to improve the ability of people, communities, and organizations to work together to develop mutual understanding about desired resource conditions and outcomes and to develop multiple-use management options that respond to public interests or concerns in the context of best available information and appropriate analysis. The proposed rule requires the Responsible Official to demonstrate in the planning record how the planning process made use of the best available science relevant to the issues being considered.

Consistent with the 1990 Critique, and as validated by the Committee of Scientists' report, the proposed rule emphasizes monitoring and evaluation so that management can be adapted as conditions change over time. This emphasis is in keeping with the National Forest

Management Act's direction to ensure research on evaluation of the effects of each management system, based on continuous monitoring and assessment in the field, to the end that it will not produce substantial and permanent impairment of the productivity of the land (16 U.S.C. 1604(g)(3)).

In addition, both the 2000 and proposed rules address amendments and both rules have the intent of making amendments more efficient. However, the Forest Service believes that it would be more time consuming and expensive to amend plans under the 2000 rule due to the complexity of planning direction. This complexity is described in the preamble to the proposed rule. However, it is not possible to quantify the costs of potential amendments because although amendments may be more expensive under the 2000 rule, there would consequently be fewer of them. Amendments under the proposed rule might be more frequent, but less expensive to do individually. Therefore, this topic is not addressed further in this cost/benefit analysis.

It is also likely that most plan analyses would be documented in a Categorical Exclusion (CE) or an Environmental Assessment (EA), rather than an Environmental Impact Statement (EIS). There is no known credible information to support an estimate of cost savings, because all plan revisions to date have been documented in an EIS. However, it is likely that there would be substantial savings associated with documenting plans in CE's or EA's.

Also note that much of the cost figures are from the 2002 NFMA Costing Study. This study used cost estimates from planning field practitioners. They assumed no change in the depth, rigor and detail of analysis from what is currently practiced under the 1982 rule. This assumption applied to the 2000 rule and the proposed rule. It is possible that marked savings could be realized if the type of analysis done for planning is streamlined. This concept is discussed in the preamble for the proposed rule, and as stated, additional savings are possible. There would probably be more savings for the proposed rule than the 2000 rule because the sheer volume of direction in the 2000 rule would limit what improvements could occur from more streamlined application of NEPA analysis guidance.

In summary, the proposed planning process provides for a collaborative approach to planning based upon best available scientific information and analysis and the concepts of the ecological, social, and economic components of sustainability. The benefits of this improved approach will be land and resource management plans that more fully address public concerns, and lead to improved health of forest and range ecosystems that are capable of providing a sustainable flow of goods and services.

Indirect Effects Not Quantified in the Analysis

Since the proposed rule establishes procedures for land and resource management planning for NFS lands, promulgation will not result in any immediate changes in the management of any particular National Forest, Grassland or Prairie in activities permitted or conducted on those lands. Thus, the adoption of the proposed rule would not have a direct impact on the quality of the human environment due to its programmatic nature. However, future implementation of projects on individual NFS units could affect decisions that are made for those lands.

Implementation of the proposed rule could eventually lead to an effect on economic and social factors by reducing or increasing the amount of products and services derived from NFS lands. This could result in a localized change in some types of employment and in payments to

states. However, implementation of the proposed rule is expected to eventually result in plans that improve the sustainability of the ecological systems, potentially increasing the availability of goods and services from NFS lands and thus the availability of forest or grassland-related jobs, income, and payments to states. Any short-term or long-term effects on the availability of forest or grassland products and services would occur on a unit-by-unit basis through forest/grassland and project level planning. It is not possible to determine short or long term environmental consequences of those future decisions in this analysis. For this reason, quantifiable impacts to the availability of forest or grassland products and services and the associated economic effects cannot be determined at this time.

It is possible to provide some estimate of potential broader social effects. While both the 2000 and proposed rules propose active public involvement, the more streamlined planning processes in the proposed rule may result in more public satisfaction, because it would be possible to produce new plans or amend or revise plans more quickly. This would allow a more efficient response to emerging public issues. Also, if funds currently allocated to planning were reduced because the proposed rule is more efficient and fewer funds are needed, these funds could be reallocated to on-the-ground projects, and plan monitoring, which could also result in higher levels of public satisfaction.

Development of General Assumptions

The complexity of the decisions made in the planning process will increase in the future as they have in the past. The benefit/cost analysis addresses the comparative costs and benefits of the 1982, 2000 and proposed planning rule. This analysis does not estimate the trends in planning complexity or the associated costs. It only compares quantitative differences between the 2000 regulation and the 1982 regulation as modified by current practices and a discussion of the incremental effects between the 2000 regulation and this proposed rule.

Costs

The analysis includes annual expenses for interdisciplinary planning teams working on regional guides; plan development or revision, including costs associated with collaboration, science support, analysis, and determination of sustainability; costs of the support provided by other staffs, scientists, and line officers; the cost of compiling and managing the data needed for planning analyses; and the cost of providing public notice and comment periods, and resolving appeals or objections.

Sources of Cost Data

The cost estimates for planning activities under the 1982 regulation were developed by analyzing cost data for plan revisions that have been recently completed under the current state-of-the-art under the 1982 regulation. These costs were included in a report to the House and Senate Committees on Appropriations entitled, "*Forest Service Land and Resource Management Planning: The Status of Activities*," dated January 31, 2002. The costs contained in this report however, only included planning costs on the forest units. They did not contain the costs incurred at other organizational levels. To estimate the non-forest costs, this analysis relied on results from the costing study to assist in determining likely costs associated with the 1982 regulation for regional office, contracts, and science support to forests.

In addition, an empirical estimate of the cost per plan for resolving appeals under the 1982 regulation was made. Costs for the 1982 regulation were summed into one Revision Cost due to the lack of more specific data on the costs of sub-activity centers.

The 2002 NFMA Costing Study investigated the costs of land and resource management planning associated with the 2000 regulation and the proposed 2002 rule using a business modeling process. This costing study is the most comprehensive study on planning costs ever conducted. It directly compares major cost centers for both the 2000 regulations and the proposed 2002 rule and includes field validation of the results by agency planners and interdisciplinary specialists.

Regional Cost Differences

The Forest Service is divided into nine Regions: Regions 1-6 and Regions 8 and 9 (there is no Region 7) are in the contiguous United States, while Region 10 is located in Alaska. Costs provided by R10 are higher than the estimates from the rest of the Regions. The higher cost for Alaska is based on planning experiences on the Tongass and Chugach National Forests, which are about twice as large as the national average NFS unit, and is attributable to the higher cost of living and travel, and complexities added by the large spatial scales encountered. R10 costs are calculated separately rather than significantly weighting the average costs for the rest of the country. The differences are noted in the following discussions.

Time Frame for Analysis

The NFMA requires that a plan be revised every 10-15 years for the 1982, 2000 and this proposed rule. The scheduling estimates, for purposes of this analysis, are for a 15-year period beginning in 2002. Costs are compiled over that cycle and discounted at an annual rate of 7 percent as provided by OMB Economic Analysis of Federal Regulations under Executive Order 12866, January 11, 1996. The dollar estimates received from the regions and national forests are averages of several years of data unadjusted for inflation.

Based on the costing study, the median expected time required to complete a plan revision is about 5 years for the proposed 2002 rule and 6 years for the 2000 regulation. The *Forest Service Land and Resource Management Plan Revision Schedule*, published in the Federal Register on November 30, 2001, estimates that it will take five years to revise plans under the 1982 regulation.

The number of forest or grassland plans under revision is based on the above cited schedule. The number of plans needing revision between Fiscal Year 2002-2016, and an assumption of 9 NFS units each year initiating revision at the third round of the revision cycle, are used in this cost benefit analysis.

Baseline for Comparison

The benefits and costs of each alternative must be measured against a baseline. This is required by *OMB Memorandum 00-08* and *Economic Analysis of Federal Regulations Under Executive Order 12866*. The baseline should be the best assessment of the way the world would look absent the proposed regulation. In this case the baseline would be the 1982 regulation. At the present time the only option available for forest planning is the 1982 regulation. As

previously mentioned, transition to the 2000 regulation has been extended by the Secretary of Agriculture and the regulation is currently not being used.

The time, cost and scheduling estimates represent the best information available. However, all estimates are of limited precision and changing circumstances could affect the results. A discussion of the assumptions used to estimate the economic effects of specific provisions in the proposed rule follow. The undiscounted and discounted cost comparisons over the 15-year period are also displayed.

Economic Analysis of Specific Planning Processes

The rest of this report identifies and discusses the requirements, assumptions and economic effects for key National Forest System planning processes. For purposes of making the planning process found in the three rules more understandable and comparable, the key activities and cost centers were aggregated into six main activity groupings with similar tasks:

- Preparation of Regional Guides
- Collaboration, Analysis of the Current Management Situation, Identification of Issues and Public Notification
- Science Support
- Analyze Effects, Develop Plan Decisions, Document the Plan
- Assess Decisions for Sustainability and Meeting the Diversity Requirements
- Consider and Resolve Appeals/Objections

Table A in the Appendices displays the cost input values for the three rules. For the 1982 regulation, costs used largely come from empirical data from implementing the rule. Since neither the 2000 regulation nor the proposed 2002 rule has been implemented, these cost figures come from the 2002 NFMA Costing Study.

Appendix Tables B-1 to B-10 display the cost benefit calculations for planning activities in the three rules.

A. Preparation of Regional Guides

1982 Regulation

The 1982 regulation required the development and maintenance of a Regional Guide for each of the nine Forest Service Regions. Significant changes to update the Regional Guide are made following the same procedures used to develop the initial guide, including an environmental impact statement. Regional Guides were intended to be the interface between the Forest Service national strategic plan and land and resource management plans. Updates to the Regional Guide were expected periodically to reflect changes in regional programs, goals and objectives and to provide tentative resource objectives for each forest or grassland based on the current national strategic plan. Other elements of the Regional Guide requiring updates included the analysis of the regional management situation; management direction to address major issues considered at the regional level to facilitate planning; standards and guidelines on harvest methods, size and dispersal of created openings in even-aged forest management; and management intensities and utilization standards for determining harvest levels for the Region. Updates to the Regional Guides were made through management decisions using information gathered in broad-scale assessments.

Most regions did not regularly amend their Regional Guides. Instead, costs were incurred through broad-scale assessments and management decisions based on those assessments. There are no future costs associated with Regional Guides as they have been withdrawn as required by the 2000 regulation or will be withdrawn shortly after the draft proposed rule is published in the Federal Register.

The 2000 regulations and this proposed rule would link land and resource management plans with Forest Service policies, laws, Executive Orders, regulations, and applicable Forest Service strategic plans.

Cost Comparison

The estimated cost of updating Regional Guides is based on estimates done for the 1995 proposed rule, which identified a schedule of activities and costs under the existing regulation to keep the nine regional guides up-to-date. These costs included an environmental impact statement to accompany comprehensive updates. For purposes of this analysis all Regional Guides need comprehensive updates (revisions) starting in Fiscal Year (FY) 2002 except for Region 2 where the Regional Guide was more recently revised. Six years after the completion of a Regional Guide initiation of another revision is assumed necessary.

Under the 1982 regulation, the average annual undiscounted cost is \$747,000, as calculated in Appendix Table B-1.

Regional Guides were not being retained under the 2000 regulation and proposed 2002 rule. Other planning activities such as the Government Performance and Results Act, broad-scale assessments, multi-forest amendment processes, directive system, and more informal “desk guides” generally replaced the key functions of Regional Guides. The true difference in cost depends on the cost of these replacement activities, particularly the cost of broad-scale assessments. The costs of these activities are now assigned to other cost centers in the costing study and in this analysis.

B. Collaboration, Analyze the Current Management Situation, Identification of Issues, and Notification

The 1982 and 2000 regulations as well as the proposed 2002 rule all required these activities as part of their planning processes. The timing of when some activities occurred differs among the rules.

The 1982 regulation contained a requirement to involve the interested public in the planning process that was usually accomplished through NEPA scoping and comment.

Both the 2000 regulation and the proposed 2002 rule contain this requirement and envision collaboration as being part of a larger effort to inform the public, solicit their ideas, and to build trust and credibility in the agency’s fulfillment of its mission. Such involvement goes beyond traditional NEPA scoping and commenting on agency draft and final decisions, and extends it throughout the planning process.

The 2000 regulation differs from the proposed 2002 rule in that it also required that each forest, grassland or prairie supervisor have access to a Federal Advisory Committee Act board that would assist the Responsible Official in resolving public conflicts and in determining when

sufficient public involvement had been achieved. The proposed 2002 rule views such mandatory committees as an unnecessary requirement, although they would still be allowed in those situations where a Responsible Official feels they would be of value.

The task of analyzing the current situation is a pre-Notice of Intent (NOI) activity in the 2000 regulation and the proposed 2002 rule. It serves as the basis for identifying the need for change and in helping to frame the issues to be addressed in the revision process. In the 1982 regulation and the first round of forest or grassland plans it served to establish a baseline and benchmark for making management changes through the planning process.

The activities within the broad category of identification of issues vary broadly among the three rules. In the 1982 regulation it occurred post-NOI and was a set of public, agency, and statutory issues, concerns and opportunities to be considered in the planning process. Recommendations to Congress regarding Wilderness designations is one of the statutory issues to be addressed in the planning process. Neither broad scale assessments nor roadless area analysis were required. In the 2000 regulation this activity was pre-NOI and included broad scale assessments and roadless area analysis; Wilderness evaluation remained a post-NOI activity. In the 2002 proposed rule similar roadless area analysis and broad scale assessments, if deemed appropriate by the Responsible Official, are a post-NOI activity and were part of the “Assess Decisions for Sustainability” cost center from the 2002 NFMA Costing Study.

Notifying the public of proposed agency actions and decisions is similar among all three rules and largely driven by statutory requirements.

Cost Comparisons

For the 1982 regulation, this activity center was not estimated separately due to a lack of specific data. The costs are summarized in the “Revise Plan” activity in Tables 1 to 4 and analyzed in Appendix Table B-8.

For the 2000 regulation and the proposed 2002 rule, certain adjustments were made to be able to utilize the information from the 2002 NFMA Costing Study. The principal one was to remove the cost for large scale assessments for the 2000 regulation out of the cost for Issue Identification, and include it in the Assess Decisions for Sustainability cost center to make the 2000 regulation and the 2002 rule comparable.

The average annual undiscounted cost savings of the proposed rule is about \$14 million when compared to the 2000 regulation. The discounted cost savings are about \$123.6 million over the 15-year planning cycle. Calculations are contained in Appendix Table B-2.

C. Science Support

Science support activities involve the application of the best available science to planning. These activities occur throughout the planning process. Costs in this activity center will vary depending upon the complexity of the issue and the availability and reliability of data to support the decision being made. For some issues the complexity may require a broader set of scientific disciplines and higher skills and thereby increase costs.

The 1982 regulation was largely silent on how to best integrate science into the planning process, although it was assumed that it would occur since natural resources management is

composed of science-based disciplines and specialties. The 2000 regulation dictated numerous specific procedural requirements for using science reviews, science boards, and scientific peer review, largely without discretion. In the proposed 2002 rule greater discretion is given to the Responsible Official to choose the type, timing, and methods of science involvement.

Cost Comparisons

For the 1982 regulation, this activity center was not estimated separately due to a lack of specific data. The costs are summarized in the “Revise Plan” activity in Tables 1 to 4 and analyzed in Appendix Table B-8.

The average annual undiscounted cost savings of the proposed rule is about \$4.3 million when compared to the 2000 regulation. The discounted cost savings are about \$38.8 million over the 15-year planning cycle. Calculations are contained in Appendix Table B-3.

D. Analyze Effects, Develop Plan Decisions, Document the Plan

In all three rules these activities occur post-NOI and pre-Notice of Availability. These activities are integral with the NEPA process and other legal requirements, which are included in this cost center. This activity grouping represents the bulk of the work in preparing a revised plan. It contains the environmental analysis and development of the alternatives and the land and resource management plan. These costs are highly dependent on the legal and political environment and the nature of the decisions to be made. The level of risk assumed greatly affects the magnitude of the costs. The more “bulletproof” the analysis to withstand potential challenges, the more costs will increase.

Other factors influencing the cost are the complexity of the issues, presence of listed and other species of concern, spatial scale, and social or economic concerns. The availability of information and how existing plans have been maintained through amendments also influences the costs to revise.

Plan documentation activities include establishing and maintaining the administrative record, documenting the revised plan direction, and making the revised plan available to the public in electronic, Compact Disc, written format, or any combination thereof.

Cost Comparisons

For the 1982 regulation, this activity center was not estimated separately due to a lack of specific data. The costs are summarized in the “Revise Plan” activity in Tables 1 to 4 and analyzed in Appendix Table B-8.

The average annual undiscounted cost savings of the proposed rule is about \$5.5 million when compared to the 2000 regulation. The discounted cost savings are about \$45.5 million over the 15-year planning cycle. Calculations are contained in Appendix Table B-4.

E. Assess Decisions for Sustainability and Meeting the Diversity Requirements

Activities in this area serve to ensure sustainable ecosystems are maintained on NFS lands and thereby provide for the sustainable and renewable production of the multiple-uses.

NFMA requires that plans provide for the diversity of plant and animal communities. Under the 1982 rule, this requirement was met primarily through a requirement to provide habitat to maintain viable populations of native and desired non-native vertebrate species.

This is an area of rapidly evolving and emerging science and art of application. Many of the activities of both the 2000 regulation and the 2002 rule are not well understood, so estimates of costs in this area are more speculative than those of other cost centers. Both rules address a staged process where ecosystem diversity is first evaluated followed by species diversity (“coarse and fine filter approach”). The cost of this activity is directly related to how well the ecosystem diversity design can provide for the needs of species at risk. The more species that need to be addressed individually, the greater the costs.

Since there is not agreement upon the technical aspects of the analysis methodologies, there are questions about the degree and depth of analysis required to assure that biodiversity is provided for within the planning area. Other factors such as the degree of risk assumption, the level of public interest and the spatial scale of the plan area also affect costs.

It is anticipated that public comment, broader internal review, and incorporation of the results from a planned diversity workshop will improve the clarity of the requirements in this activity area and result in an improved approach in the proposed regulation.

While both rules address ecosystem and species diversity, the 2000 regulation is much more prescriptive and defined. In contrast, the proposed 2002 rule gives the Responsible Official much more flexibility and leeway to choose the means for addressing ecosystem and species diversity, and is likely to be less costly than the 2000 regulation.

The proposed 2002 rule contains two procedural options for this activity. Option 1, streamlined from the 2000 rule, focuses analyses on both ecosystem diversity and species diversity, and establishes viability of vertebrates and vascular plants in the plan area as the measurement of achievement of the NFMA diversity requirement. Option 2, originally developed by agency research scientists, requires a more robust analysis of ecosystem and species diversity in a landscape context, and meets the NFMA diversity language by requiring that plan decisions conserve and restore biological diversity in the planning area, which includes the area covered by the plan and other surrounding and interspersed ownerships. This option is more prescriptive and requires spatial analysis of information at more scales.

According to the 2002 NFMA Costing Study, the estimated annual costs per forest to conduct activities relating to assess decisions for sustainability and meeting the diversity requirements are averaged at \$450,826 for the proposed option 1 and \$578,553 for the proposed option 2. The cost estimate from the 2002 Costing Study for option 2 reflects the fact that it has more explicit process steps and there is some degree of uncertainty regarding rule application because it is a newer approach. The midpoint average cost between these 2 options is \$514,689 per year. Both cost for options 1 and 2 as well as a midpoint average cost between Options 1 and 2 were used in this analysis (see appendix Table A). As part of the comment process for the proposed rule, public and scientific input on the options will be sought, and a single approach developed for the proposed rule.

It should be noted again that for the 2000 regulation the cost of broad scale assessments was removed from the Issue Identification cost center and placed within this cost center to be consistent with the approach of the 2002 rule.

Cost Comparisons

For the 1982 regulation, this activity center was not estimated separately due to a lack of specific data. The costs are summarized in the “Revise Plan” activity in Tables 1 to 4 and analyzed in Appendix Table B-6.

For all National Forests, the calculated 15-year average annual undiscounted cost for the proposed 2002 rule option 1 is about \$16.3 million and for option 2 is about \$20.9 million (Table 1). The annual average undiscounted cost difference between option 1 and option 2 is about \$4.6 million. The total discounted cost difference between these 2 options is \$43 million over the 15-year planning cycle. When compared to the 2000 regulation, the 15-year annual average undiscounted cost saving is about \$6.17 million for option 1 and \$1.56 million for option 2. The average annual undiscounted cost savings of the mid-point average of these 2 options of the proposed rule is about \$3.9 million when compared to the 2000 regulation. The discounted cost savings are about \$33 million over the 15-year planning cycle. In comparing to the 2000 regulation, the discounted cost savings over 15-year planning cycle are about \$54.7 million, \$11.5 million, and \$33 million for option 1, option 2, and the mid-point average of 2 options, respectively.

Calculations for the 2000 rule, the proposed 2002 rule Option 1, Option 2, and the average of the 2 options are contained in Appendix Tables B-5, B-6, and B-7 respectively.

F. Revise plan

Since there were no costs available by sub-activity for planning under the 1982 regulation, the total experienced costs were used as reported in the January 2002 Report to the House and Senate Committees on Appropriations, and updated using assumptions from the 2002 costing study for costs associated with plan revision but not incurred on the forest unit level.

Cost Comparisons

The average annual undiscounted cost is about \$73.9 million. The discounted cost for the 1982 regulation is \$681.5 million over the 15-year planning cycle. Analysis may be found in Appendix Table B-8.

For the 2000 regulation and the proposed 2002 rule, these cost estimates are included in the “Collaboration, Science support, Analysis of effects, and Assessment of sustainability” cost centers.

G. Consider and Resolve Appeals and Objections

The 1982 regulation contained a post-decisional appeals process whereby interested parties dissatisfied with the plan decisions would appeal to the Chief of the Forest Service to overturn or modify the plan. This process by nature is adversarial and very costly and time consuming.

In line with the desire to make the planning process more collaborative and the debate over plan decisions more timely and less costly, both the 2000 regulation and the proposed 2002 rule included a pre-decisional objection process to provide the public the opportunity to object to proposed plan direction and to potentially resolve the objections before a final decision was made. Costs for such a process will likely be much less than for the Appeals process.

Cost Comparisons

Empirical costs for appeal resolution were used to approximate the costs associated with the 1982 regulation. These costs are estimated to currently cost approximately \$330,000 per plan. The average annual undiscounted cost is about \$2.4 million, and the discounted cost for the 15-year cycle is about \$20.6 million. Analysis can be found in Appendix Table B-10.

For the 2000 regulation and the proposed 2002 rule, the estimated costs for resolving pre-decisional objections from the costing study were used to compare with the 1982 regulation's cost of deciding appeals. The discounted costs were \$7.9 million and \$8.6 million respectively for the 2000 regulation and the proposed 2002 rule for a 15-year planning cycle. Both rules are estimated to save about \$1.5 million per year in undiscounted dollars. The proposed 2002 rule is estimated to cost \$47,000 per year more than the 2000 regulation in undiscounted dollars. This arises from the fact that in the analysis more objections are resolved in the analysis for the proposed 2002 rule due to the timing differences in preparing a revision in the two rules. The analysis can be found in Appendix Table B-9.

Summary and Conclusions

The cost-benefit analysis focused on key activities in land and resource management planning for which costs could be estimated under the 1982 regulation, 2000 rule and the proposed 2002 rule. Those major activities included:

- Preparation of Regional Guides
- Collaboration, Analysis of the Current Management Situation, Identification of Issues and Public Notification
- Science Support
- Analyze Effects, Develop Plan Decisions, Document the Plan
- Assess Decisions for Sustainability and Meeting the Diversity Requirements; and,
- Consider and Resolve Appeals/Objections.

When compared the costs of planning activities under the proposed 2002 rule to the 1982 rule, option 1 is estimated to cost \$3.4 million per year less than the 1982 regulation; for option 2, it is estimated to cost \$1.2 million per year more than the 1982 regulation; and 1.1 million per year less than the 1982 regulation for average of 2 options. The proposed 2002 rule is estimated to have an annual average cost savings of \$30 million for option 1 when compared to the 2000 regulation, and an annual average cost savings of \$25 million for option 2 over the 2000 regulation. (Refer to Tables 2, 3, and 4).

In addition to the expected cost savings, numerous intangible benefits are expected to result from the proposed rule. The overall goal of the proposed plan is to develop a planning framework that fosters stewardship of the National Forest System lands and improves the likelihood of contributing toward the ecological, social, and economic components of

sustainability. Better decisions provide sustained goods, services, and values without impairment of the health of the land. These improvements will be based on better collaboration with the public, improved monitoring and evaluation, integration of science, and a more flexible process that reduces the burden on both the public and the agency. A planning process that addresses public concerns and leads to improved health of the public lands has value beyond the cost savings estimated in the analysis. Therefore, it is highly likely that the proposed rule is beneficial to the public interest.

Table 1. Estimates of undiscounted annual average, total undiscounted, and total discounted costs of key planning activities over a 15-year planning cycles for 1982 rule, 2000 rule and proposed 2002 rule

Planning Activity	Cost Estimate	1982 Rule	2000 Rule	Proposed 2002 Rule		
				Option 1	Option 2	Average of Options 1 and 2
Regional Guide		-----	-----	--- \$1,000---	-----	-----
	Annual average	\$747				
	15-year total undiscounted cost	\$11,200				
	15-year total discounted cost	\$8,763				
Collaboration	Annual average	-----	\$39,688	\$25,632	\$25,632	\$25,632
	15-year total undiscounted cost	-----	\$595,322	\$384,485	\$384,485	\$384,485
	15-year total discounted cost	-----	\$360,050	\$236,453	\$236,453	\$236,453
Science Support	Annual average	-----	\$7,785	\$3,449	\$3,449	\$3,449
	15-year total undiscounted cost	-----	\$116,775	\$51,729	\$51,729	\$51,729
	15-year total discounted cost	-----	\$70,625	\$31,813	\$31,813	\$31,813
Analyze effects, develop decisions and document the plan	Annual average	-----	\$32,720	\$27,241	\$27,241	\$27,241
	15-year total undiscounted cost	-----	\$490,793	\$408,608	\$408,608	\$408,608
	15-year total discounted cost	-----	\$296,831	\$251,288	\$251,288	\$251,288
Assess decisions for sustainability and diversity requirements	Annual average	-----	\$22,466	\$16,290	\$20,905	\$18,598
	15-year total undiscounted cost	-----	\$336,986	\$244,348	\$313,576	\$278,967
	15-year total discounted cost	-----	\$207,242	\$152,499	\$195,705	\$174,105
Revise Plan	Annual average	\$73,874	-----	-----	-----	-----
	15-year total undiscounted cost	\$1,108,110	-----	-----	-----	-----
	15-year total discounted cost	\$681,472	-----	-----	-----	-----
Consider and Resolve Appeal/Objection	Annual average	\$2,442	\$975	\$1,022	\$1,022	\$1,022
	15-year total undiscounted cost	\$36,630	\$14,631	\$15,328	\$15,328	\$15,328
	15-year total discounted cost	\$20,614	\$7,906	\$8,626	\$8,626	\$8,626
Total	Annual average	\$77,063	\$103,634	\$73,633	\$78,248	\$75,941
	15-year total undiscounted cost	\$1,155,940	\$1,554,507	\$1,104,498	\$1,173,726	\$1,139,117
	15-year total discounted cost	\$710,849	\$942,654	\$680,679	\$723,885	\$702,285

Table 2. Summary of undiscounted annual average, total undiscounted, and total discounted costs of key planning activities over a 15-year planning cycle under 1982 rule, 2000 rule and proposed 2002 rule option 1

Planning Activity	Cost Estimate	Difference between		
		1982 Rule and 2000 Rule	1982 Rule and Proposed 2002 Rule--Option 1	2000 Rule and Proposed 2002 Rule--Option 1
		-----	-----\$1,000-----	-----
Regional Guide	Annual average	-\$747	-\$747	
	15-year total undiscounted cost	-\$11,200	-\$11,200	
	15-year total discounted cost	-\$8,763	-\$8,763	
Collaboration	Annual average	\$39,688	\$25,632	-\$14,056
	15-year total undiscounted cost	\$595,322	\$384,485	-\$210,837
	15-year total discounted cost	\$360,050	\$236,453	-\$123,597
Science Support	Annual average	\$7,785	\$3,449	-\$4,336
	15-year total undiscounted cost	\$116,775	\$51,729	-\$65,046
	15-year total discounted cost	\$70,625	\$31,813	-\$38,812
Analyze effects, develop decisions and document the plan	Annual average	\$32,720	\$27,241	-\$5,479
	15-year total undiscounted cost	\$490,793	\$408,608	-\$82,185
	15-year total discounted cost	\$296,831	\$251,288	-\$45,543
Assess decisions for sustainability and diversity requirements	Annual average	\$22,466	\$16,290	-\$6,176
	15-year total undiscounted cost	\$336,986	\$244,348	-\$92,638
	15-year total discounted cost	\$207,242	\$152,499	-\$54,743
Revise Plan	Annual average	-\$73,874	-\$73,874	
	15-year total undiscounted cost	-\$1,108,110	-\$1,108,110	
	15-year total discounted cost	-\$681,472	-\$681,472	
Consider and Resolve Appeal/Objection	Annual average	-\$1,467	-\$1,420	\$47
	15-year total undiscounted cost	-\$21,999	-\$21,302	\$697
	15-year total discounted cost	-\$12,708	-\$11,988	\$720
Total	Annual average	\$26,571	-\$3,429	-\$30,001
	15-year total undiscounted cost	\$398,567	-\$51,442	-\$450,009
	15-year total discounted cost	\$231,805	-\$30,170	-\$261,975

Table 3. Summary of undiscounted annual average, total undiscounted, and total discounted costs of key planning activities over a 15-year planning cycle under 1982 rule, 2000 rule, and proposed 2002 rule option 2

Planning Activity	Cost Estimate	Difference between		
		1982 Rule and 2000 Rule	1982 Rule and Proposed 2002 Rule--Option 2	2000 Rule and Proposed 2002 Rule--Option 2
Regional Guide		-----\$1,000 -----		
	Annual average	-\$747	-\$747	
	15-year total undiscounted cost	-\$11,200	-\$11,200	
	15-year total discounted cost	-\$8,763	-\$8,763	
Collaboration	Annual average	\$39,688	\$25,632	-\$14,056
	15-year total undiscounted cost	\$595,322	\$384,485	-\$210,837
	15-year total discounted cost	\$360,050	\$236,453	-\$123,597
Science Support	Annual average	\$7,785	\$3,449	-\$4,336
	15-year total undiscounted cost	\$116,775	\$51,729	-\$65,046
	15-year total discounted cost	\$70,625	\$31,813	-\$38,812
Analyze effects, develop decisions and document the plan	Annual average	\$32,720	\$27,241	-\$5,479
	15-year total undiscounted cost	\$490,793	\$408,608	-\$82,185
	15-year total discounted cost	\$296,831	\$251,288	-\$45,543
Assess decisions for sustainability and diversity requirements	Annual average	\$22,466	\$20,905	-\$1,561
	15-year total undiscounted cost	\$336,986	\$313,576	-\$23,410
	15-year total discounted cost	\$207,242	\$195,705	-\$11,537
Revise Plan	Annual average	-\$73,874	-\$73,874	
	15-year total undiscounted cost	-\$1,108,110	-\$1,108,110	
	15-year total discounted cost	-\$681,472	-\$681,472	
Consider and Resolve Appeal/Objection	Annual average	-\$1,467	-\$1,420	\$47
	15-year total undiscounted cost	-\$21,999	-\$21,302	\$697
	15-year total discounted cost	-\$12,708	-\$11,988	\$720
Total	Annual average	\$26,571	\$1,186	-\$25,385
	15-year total undiscounted cost	\$398,567	\$17,786	-\$380,781
	15-year total discounted cost	\$231,805	\$13,036	-\$218,769

Table 4. Summary of undiscounted annual average, total undiscounted, and total discounted costs of key planning activities over a 15-year planning cycle under 1982 rule, 2000 rule, and proposed 2002 rule average of 2 options

Planning Activity	Cost Estimate	Difference between		
		1982 Rule and 2000 Rule	1982 Rule and Proposed 2002 Rule--average 2 options	2000 Rule and Proposed 2002 Rule--average 2 options
Regional Guide		-----\$1,000 -----		
	Annual average	-\$747	-\$747	
	15-year total undiscounted cost	-\$11,200	-\$11,200	
	15-year total discounted cost	-\$8,763	-\$8,763	
Collaboration	Annual average	\$39,688	\$25,632	-\$14,056
	15-year total undiscounted cost	\$595,322	\$384,485	-\$210,837
	15-year total discounted cost	\$360,050	\$236,453	-\$123,597
Science Support	Annual average	\$7,785	\$3,449	-\$4,336
	15-year total undiscounted cost	\$116,775	\$51,729	-\$65,046
	15-year total discounted cost	\$70,625	\$31,813	-\$38,812
Analyze effects, develop decisions and document the plan	Annual average	\$32,720	\$27,241	-\$5,479
	15-year total undiscounted cost	\$490,793	\$408,608	-\$82,185
	15-year total discounted cost	\$296,831	\$251,288	-\$45,543
Assess decisions for sustainability and diversity requirements	Annual average	\$22,466	\$18,598	-\$3,868
	15-year total undiscounted cost	\$336,986	\$278,967	-\$58,019
	15-year total discounted cost	\$207,242	\$174,105	-\$33,137
Revise Plan	Annual average	-\$73,874	-\$73,874	
	15-year total undiscounted cost	-\$1,108,110	-\$1,108,110	
	15-year total discounted cost	-\$681,472	-\$681,472	
Consider and Resolve Appeal/Objection	Annual average	-\$1,467	-\$1,420	\$47
	15-year total undiscounted cost	-\$21,999	-\$21,302	\$697
	15-year total discounted cost	-\$12,708	-\$11,988	\$720
Total	Annual average	\$26,571	-\$1,122	-\$27,693
	15-year total undiscounted cost	\$398,567	-\$16,823	-\$415,390
	15-year total discounted cost	\$231,805	-\$8,564	-\$240,369

Appendices

Appendix **Table A** – Per Plan Cost figures used for the quantified cost-benefit analysis

Planning Process requirements	1982 rule annual cost	2000 rule annual cost <u>1/</u>	proposed rule annual cost <u>1/</u>
	-----\$1,000 -----		
Regional Guides			
Regions 1-9	\$600.0		
Region 10	\$800.0		
Collaborations		\$797.0	\$596.0
Science support		\$156.0	\$80.0
Analyze effects, develop decisions, and document the plan		\$657.0	\$633.5
Assess decisions for sustainability, and diversity requirements:		\$522.5	
Option 1			\$450.8
Option 2			\$578.6
Average of 2 Options			\$514.7
Revise plan	\$1,718.0		
Appeal/objection	\$330.0	\$143.0	\$138.0

1/ Numbers were estimated from the 2002 NFMA Costing Study.

Appendix B-1. Costs of Regional Guide updates under the 1982 rule								
R1-R9	2002	2003	2004	2005	2006	2007	2008	2009
ANN COST (\$1,000)	\$300							
Discount factors@7.0%	1	0.93458	0.87344	0.81630	0.76290	0.71299	0.66634	0.62275
Guides in process	7	7	0	1	1	0	7	7
Undiscounted costs	\$2,100	\$2,100	\$-	\$300	\$300	\$-	\$2,100	\$2,100
Discounted costs	\$2,100	\$1,963	\$-	\$245	\$229	\$-	\$1,399	\$1,308
	2010	2011	2012	2013	2014	2015	2016	TOTALS
Discount factors@7.0%	0.58201	0.54393	0.50835	0.47509	0.44401	0.41496	0.38782	
Guides in process	0	0	1	1	0	0	0	32
Undiscounted costs	\$-	\$-	\$300	\$300	\$-	\$-	\$-	\$9,600
Discounted costs	\$-	\$-	\$153	\$143	\$-	\$-	\$-	\$7,539
	2002	2003	2004	2005	2006	2007	2008	2009
R10	2							
ANN COST (\$1,000)	\$400							
Discount factors@7.0%	1	0.93458	0.87344	0.81630	0.76290	0.71299	0.66634	0.62275
Guides in process	1	1	0	0	0	0	0	0
Undiscounted costs	\$400	\$400	\$-	\$-	\$-	\$-	\$-	\$-
Discounted costs	\$400	\$374	\$-	\$-	\$-	\$-	\$-	\$-
	2010	2011	2012	2013	2014	2015	2016	TOTALS
Discount factors@7.0%	0.58201	0.54393	0.50835	0.47509	0.44401	0.41496	0.38782	
Guides in process	1	1		0	0			4
Undiscounted costs	\$400	\$400	\$-	\$-	\$-	\$-	\$-	\$1,600
Discounted costs	\$233	\$218	\$-	\$-	\$-	\$-	\$-	\$1,224
	Regions 1-9	Region 10	TOTALS	Annual average				
Undiscounted costs	\$9,600	\$1,600	\$11,200	\$747				
Discounted costs	\$7,539	\$1,224	\$8,763					

Appendix B-2. Costs of Collaboration under the 2000 rule and 2002 proposed rule								
2000 Rule	2002	2003	2004	2005	2006	2007	2008	2009
ANN COST (\$1,000)	\$797							
Discount factors@7.0%	1	0.93458	0.87344	0.81630	0.76290	0.71299	0.66634	0.62275
number of plans	9	20	31	41	54	67	66	64
Undiscounted costs (\$1,000)	\$7,173	\$15,939	\$24,705	\$32,675	\$43,035	\$53,396	\$52,599	\$51,005
Discounted costs (\$1,000)	\$7,173	\$14,896	\$21,579	\$26,672	\$32,831	\$38,070	\$35,049	\$31,763
	2010	2011	2012	2013	2014	2015	2016	TOTALS
Discount factors@7.0%	0.58201	0.54393	0.50835	0.47509	0.44401	0.41496	0.38782	
number of plans	62	61	57	53	54	54	54	747
Undiscounted costs (\$1,000)	\$49,411	\$48,614	\$45,426	\$42,238	\$43,035	\$43,035	\$43,035	\$595,322
Discounted costs (\$1,000)	\$28,758	\$26,443	\$23,092	\$20,067	\$19,108	\$17,858	\$16,690	\$360,050
proposed rule (2002)	2002	2003	2004	2005	2006	2007	2008	2009
ANN COST (\$1,000)	\$596							
Discount factors@7.0%	1	0.93458	0.87344	0.81630	0.76290	0.71299	0.66634	0.62275
number of plans	9	20	31	41	54	58	55	53
Undiscounted costs (\$1,000)	\$5,365	\$11,922	\$18,479	\$24,440	\$32,189	\$34,574	\$32,786	\$31,593
Discounted costs (\$1,000)	\$5,365	\$11,142	\$16,140	\$19,950	\$24,557	\$24,651	\$21,846	\$19,675
	2010	2011	2012	2013	2014	2015	2016	TOTALS
Discount factors@7.0%	0.58201	0.54393	0.50835	0.47509	0.44401	0.41496	0.38782	
number of plans	52	48	44	45	45	45	45	645
Undiscounted costs (\$1,000)	\$30,997	\$28,613	\$26,228	\$26,825	\$26,825	\$26,825	\$26,825	\$384,485
Discounted costs (\$1,000)	\$18,041	\$15,563	\$13,333	\$12,744	\$11,910	\$11,131	\$10,403	\$236,453

Appendix B-3. Costs of Science Support under the 2000 rule and 2002 proposed rule								
2000 rule	2002	2003	2004	2005	2006	2007	2008	2009
ANN COST (\$1,000)	\$156							
Discount factors@7.0%	1	0.93458	0.87344	0.81630	0.76290	0.71299	0.66634	0.62275
number of plans	9	20	31	41	54	67	66	64
Undiscounted costs (\$1,000)	\$1,407	\$3,127	\$4,846	\$6,409	\$8,442	\$10,474	\$10,317	\$10,005
Discounted costs (\$1,000)	\$1,407	\$2,922	\$4,233	\$5,232	\$6,440	\$7,468	\$6,875	\$6,230
	2010	2011	2012	2013	2014	2015	2016	TOTALS
Discount factors@7.0%	0.58201	0.54393	0.50835	0.47509	0.44401	0.41496	0.38782	
number of plans	62	61	57	53	54	54	54	747
Undiscounted costs (\$1,000)	\$9,692	\$9,536	\$8,911	\$8,285	\$8,442	\$8,442	\$8,442	\$116,775
Discounted costs (\$1,000)	\$5,641	\$5,187	\$4,530	\$3,936	\$3,748	\$3,503	\$3,274	\$70,625
proposed rule (2002)	2002	2003	2004	2005	2006	2007	2008	2009
ANN COST (\$1,000)	\$80							
Discount factors@7.0%	1	0.93458	0.87344	0.81630	0.76290	0.71299	0.66634	0.62275
number of plans	9	20	31	41	54	58	55	53
Undiscounted costs (\$1,000)	\$722	\$1,604	\$2,486	\$3,288	\$4,331	\$4,652	\$4,411	\$4,251
Discounted costs (\$1,000)	\$722	\$1,499	\$2,172	\$2,684	\$3,304	\$3,317	\$2,939	\$2,647
	2010	2011	2012	2013	2014	2015	2016	TOTALS
Discount factors@7.0%	0.58201	0.54393	0.50835	0.47509	0.44401	0.41496	0.38782	
number of plans	52	48	44	45	45	45	45	645
Undiscounted costs (\$1,000)	\$4,170	\$3,850	\$3,529	\$3,609	\$3,609	\$3,609	\$3,609	\$51,729
Discounted costs (\$1,000)	\$2,427	\$2,094	\$1,794	\$1,715	\$1,602	\$1,498	\$1,400	\$31,813

Appendix B-4. Costs for Analyzing Effects, Developing Decisions, and Documenting the Plan under the 2000 rule and 2002 proposed rule								
2000 rule	2002	2003	2004	2005	2006	2007	2008	2009
ANN COST (\$1,000)	\$657.0							
Discount factors @7.0%	1	0.93458	0.87344	0.81630	0.76290	0.71299	0.66634	0.62275
number of plans	9	20	31	41	54	67	66	64
Undiscounted costs (\$1,000)	\$5,913	\$13,140	\$20,368	\$26,938	\$35,479	\$44,020	\$43,363	\$42,049
Discounted costs (\$1,000)	\$5,913	\$12,281	\$17,790	\$21,989	\$27,067	\$31,386	\$28,895	\$26,186
	2010	2011	2012	2013	2014	2015	2016	TOTALS
Discount factors @7.0%	0.58201	0.54393	0.50835	0.47509	0.44401	0.41496	0.38782	
number of plans	62	61	57	53	54	54	54	747
Undiscounted costs (\$1,000)	\$40,735	\$40,078	\$37,450	\$34,822	\$35,479	\$35,479	\$35,479	\$490,793
Discounted costs (\$1,000)	\$23,708	\$21,800	\$19,038	\$16,544	\$15,753	\$14,723	\$13,759	\$296,831
proposed rule (2002)	2002	2003	2004	2005	2006	2007	2008	2009
ANN COST (\$1,000)	\$633.5							
Discount factors @7.0%	1	0.93458	0.87344	0.81630	0.76290	0.71299	0.66634	0.62275
number of plans	9	20	31	41	54	58	55	53
Undiscounted costs (\$1,000)	\$5,702	\$12,670	\$19,639	\$25,974	\$34,209	\$36,743	\$34,843	\$33,576
Discounted costs (\$1,000)	\$5,702	\$11,841	\$17,153	\$21,202	\$26,098	\$26,197	\$23,217	\$20,909
	2010	2011	2012	2013	2014	2015	2016	TOTALS
Discount factors @7.0%	0.58201	0.54393	0.50835	0.47509	0.44401	0.41496	0.38782	
number of plans	52	48	44	45	45	45	45	645
Undiscounted costs (\$1,000)	\$32,942	\$30,408	\$27,874	\$28,508	\$28,508	\$28,508	\$28,508	\$408,608
Discounted costs (\$1,000)	\$19,173	\$16,540	\$14,170	\$13,544	\$12,658	\$11,830	\$11,056	\$251,288

Appendix B-5. Costs for Assessing Decisions for Sustainability and Diversity Requirements under the 2000 rule and 2002 proposed rule-Option 1								
2000 rule	2002	2003	2004	2005	2006	2007	2008	2009
ANN COST (\$1,000)	\$522.5							
Discount factors@7.0%	1	0.93458	0.87344	0.81630	0.76290	0.71299	0.66634	0.62275
number of plans	9	20	31	41	54	58	55	53
Undiscounted costs (\$1,000)	\$4,702	\$10,449	\$16,196	\$21,421	\$28,213	\$30,303	\$28,735	\$27,690
Discounted costs (\$1,000)	\$4,702	\$9,766	\$14,146	\$17,486	\$21,523	\$21,605	\$19,148	\$17,244
	2010	2011	2012	2013	2014	2015	2016	TOTALS
Discount factors@7.0%	0.58201	0.54393	0.50835	0.47509	0.44401	0.41496	0.38782	
number of plans	52	48	44	45	45	45	45	645
Undiscounted costs (\$1,000)	\$27,168	\$25,078	\$22,988	\$23,511	\$23,511	\$23,511	\$23,511	\$336,986
Discounted costs (\$1,000)	\$15,812	\$13,641	\$11,686	\$11,170	\$10,439	\$9,756	\$9,118	\$207,242
proposed rule (2002)	2002	2003	2004	2005	2006	2007	2008	2009
ANN COST (\$1,000)	\$450.8							
Discount factors@7.0%	1	0.93458	0.87344	0.81630	0.76290	0.71299	0.66634	0.62275
number of plans	9	20	31	41	45	47	44	43
Undiscounted costs (\$1,000)	\$4,057	\$9,017	\$13,976	\$18,484	\$20,287	\$21,189	\$19,836	\$19,386
Discounted costs (\$1,000)	\$4,057	\$8,427	\$12,207	\$15,088	\$15,477	\$15,107	\$13,218	\$12,072
	2010	2011	2012	2013	2014	2015	2016	TOTALS
Discount factors@7.0%	0.58201	0.54393	0.50835	0.47509	0.44401	0.41496	0.38782	
number of plans	39	35	44	36	36	36	36	542
Undiscounted costs (\$1,000)	\$17,582	\$15,779	\$19,836	\$16,230	\$16,230	\$16,230	\$16,230	\$244,348
Discounted costs (\$1,000)	\$10,233	\$8,583	\$10,084	\$7,711	\$7,206	\$6,735	\$6,294	\$152,499

Appendix B-6 Costs for Assessing Decisions for Sustainability and Diversity Requirements under the 2000 rule and 2002 proposed rule-Option 2								
2000 rule	2002	2003	2004	2005	2006	2007	2008	2009
ANN COST (\$1,000)	\$522.5							
Discount factors@7.0%	1	0.93458	0.87344	0.81630	0.76290	0.71299	0.66634	0.62275
number of plans	9	20	31	41	54	58	55	53
Undiscounted costs (\$1,000)	\$4,702	\$10,449	\$16,196	\$21,421	\$28,213	\$30,303	\$28,735	\$27,690
Discounted costs (\$1,000)	\$4,702	\$9,766	\$14,146	\$17,486	\$21,523	\$21,605	\$19,148	\$17,244
	2010	2011	2012	2013	2014	2015	2016	TOTALS
Discount factors@7.0%	0.58201	0.54393	0.50835	0.47509	0.44401	0.41496	0.38782	
number of plans	52	48	44	45	45	45	45	645
Undiscounted costs (\$1,000)	\$27,168	\$25,078	\$22,988	\$23,511	\$23,511	\$23,511	\$23,511	\$336,986
Discounted costs (\$1,000)	\$15,812	\$13,641	\$11,686	\$11,170	\$10,439	\$9,756	\$9,118	\$207,242
proposed rule (2002)	2002	2003	2004	2005	2006	2007	2008	2009
ANN COST (\$1,000)	\$578.6							
Discount factors@7.0%	1	0.93458	0.87344	0.81630	0.76290	0.71299	0.66634	0.62275
number of plans	9	20	31	41	45	47	44	43
Undiscounted costs (\$1,000)	\$5,207	\$11,571	\$17,935	\$23,721	\$26,035	\$27,192	\$25,456	\$24,878
Discounted costs (\$1,000)	\$5,207	\$10,814	\$15,665	\$19,363	\$19,862	\$19,388	\$16,963	\$15,493
	2010	2011	2012	2013	2014	2015	2016	TOTALS
Discount factors@7.0%	0.58201	0.54393	0.50835	0.47509	0.44401	0.41496	0.38782	
number of plans	39	35	44	36	36	36	36	542
Undiscounted costs (\$1,000)	\$22,564	\$20,249	\$25,456	\$20,828	\$20,828	\$20,828	\$20,828	\$313,576
Discounted costs (\$1,000)	\$13,132	\$11,014	\$12,941	\$9,895	\$9,248	\$8,643	\$8,077	\$195,705

Appendix B-7. Costs for Assessing Decisions for Sustainability and Diversity Requirements under the 2000 rule and 2002 proposed rule—average of 2 options								
2000 rule	2002	2003	2004	2005	2006	2007	2008	2009
ANN COST (\$1,000)	\$522.5							
Discount factors@7.0%	1	0.93458	0.87344	0.81630	0.76290	0.71299	0.66634	0.62275
number of plans	9	20	31	41	54	58	55	53
Undiscounted costs (\$1,000)	\$4,702	\$10,449	\$16,196	\$21,421	\$28,213	\$30,303	\$28,735	\$27,690
Discounted costs (\$1,000)	\$4,702	\$9,766	\$14,146	\$17,486	\$21,523	\$21,605	\$19,148	\$17,244
	2010	2011	2012	2013	2014	2015	2016	TOTALS
Discount factors@7.0%	0.58201	0.54393	0.50835	0.47509	0.44401	0.41496	0.38782	
number of plans	52	48	44	45	45	45	45	645
Undiscounted costs (\$1,000)	\$27,168	\$25,078	\$22,988	\$23,511	\$23,511	\$23,511	\$23,511	\$336,986
Discounted costs (\$1,000)	\$15,812	\$13,641	\$11,686	\$11,170	\$10,439	\$9,756	\$9,118	\$207,242
proposed rule (2002)	2002	2003	2004	2005	2006	2007	2008	2009
ANN COST (\$1,000)	\$514.7							
Discount factors@7.0%	1	0.93458	0.87344	0.81630	0.76290	0.71299	0.66634	0.62275
number of plans	9	20	31	41	45	47	44	43
Undiscounted costs (\$1,000)	\$4,632	\$10,294	\$15,956	\$21,103	\$23,162	\$24,191	\$22,647	\$22,132
Discounted costs (\$1,000)	\$4,632	\$9,621	\$13,936	\$17,226	\$17,670	\$17,248	\$15,091	\$13,783
	2010	2011	2012	2013	2014	2015	2016	TOTALS
Discount factors@7.0%	0.58201	0.54393	0.50835	0.47509	0.44401	0.41496	0.38782	
number of plans	39	35	44	36	36	36	36	542
Undiscounted costs (\$1,000)	\$20,073	\$18,015	\$22,647	\$18,529	\$18,529	\$18,529	\$18,529	\$278,967
Discounted costs (\$1,000)	\$11,683	\$9,799	\$11,512	\$8,803	\$8,227	\$7,689	\$7,186	\$174,105

Appendix B-8. Costs of Forest Plan Revision under the 1982 Rule								
1982 rule	2002	2003	2004	2005	2006	2007	2008	2009
ANN COST (\$1,000)	\$1,718							
Discount factors@7.0%	1	0.93458	0.87344	0.81630	0.76290	0.71299	0.66634	0.62275
number of plans	9	20	31	41	54	58	55	53
Undiscounted costs (\$1,000)	\$15,462	\$34,360	\$53,258	\$70,438	\$92,772	\$99,644	\$94,490	\$91,054
Discounted costs (\$1,000)	\$15,462	\$32,112	\$46,518	\$57,498	\$70,775	\$71,045	\$62,963	\$56,704
	2010	2011	2012	2013	2014	2015	2016	TOTALS
Discount factors@7.0%	0.58201	0.54393	0.50835	0.47509	0.44401	0.41496	0.38782	
number of plans	52	48	44	45	45	45	45	645
Undiscounted costs (\$1,000)	\$89,336	\$82,464	\$75,592	\$77,310	\$77,310	\$77,310	\$77,310	\$1,108,110
Discounted costs (\$1,000)	\$51,994	\$44,855	\$38,427	\$36,729	\$34,327	\$32,081	\$29,982	\$681,472

Appendix B-9. Costs of Resolving Objections under the 2000 rule and 2002 proposed rule								
2000 rule	2002	2003	2004	2005	2006	2007	2008	2009
ANN COST (\$1,000)	\$143							
Discount factors@7.0%	1	0.93458	0.87344	0.81630	0.76290	0.71299	0.66634	0.62275
number of plans	0	0	0	0	0	9	11	11
Undiscounted costs (\$1,000)	\$0	\$0	\$0	\$0	\$0	\$1,291	\$1,578	\$1,578
Discounted costs (\$1,000)	\$0	\$0	\$0	\$0	\$0	\$920	\$1,051	\$983
	2010	2011	2012	2013	2014	2015	2016	TOTALS
Discount factors@7.0%	0.58201	0.54393	0.50835	0.47509	0.44401	0.41496	0.38782	
number of plans	10	13	13	8	9	9	9	102
Undiscounted costs (\$1,000)	\$1,434	\$1,865	\$1,865	\$1,148	\$1,291	\$1,291	\$1,291	\$14,631
Discounted costs (\$1,000)	\$835	\$1,014	\$948	\$545	\$573	\$536	\$501	\$7,906
proposed rule (2002)	2002	2003	2004	2005	2006	2007	2008	2009
ANN COST (\$1,000)	\$138							
Discount factors@7.0%	1	0.93458	0.87344	0.81630	0.76290	0.71299	0.66634	0.62275
number of plans	0	0	0	0	9	11	11	10
Undiscounted costs (\$1,000)	\$0	\$0	\$0	\$0	\$1,243	\$1,519	\$1,519	\$1,381
Discounted costs (\$1,000)	\$0	\$0	\$0	\$0	\$948	\$1,083	\$1,012	\$860
	2010	2011	2012	2013	2014	2015	2016	TOTALS
Discount factors@7.0%	0.58201	0.54393	0.50835	0.47509	0.44401	0.41496	0.38782	
number of plans	13	13	8	9	9	9	9	111
Undiscounted costs (\$1,000)	\$1,795	\$1,795	\$1,105	\$1,243	\$1,243	\$1,243	\$1,243	\$15,328
Discounted costs (\$1,000)	\$1,045	\$976	\$562	\$590	\$552	\$516	\$482	\$8,626

Appendix B-10. Costs of Resolving Forest Plan Appeals under the 1982 Rule								
1982 rule	2002	2003	2004	2005	2006	2007	2008	2009
ANN COST (\$1,000)	\$330							
Discount factors@7.0%	1	0.93458	0.87344	0.81630	0.76290	0.71299	0.66634	0.62275
number of plans					9	11	11	10
Undiscounted costs (\$1,000)	\$0	\$0	\$0	\$0	\$2,970	\$3,630	\$3,630	\$3,300
Discounted costs (\$1,000)	\$0	\$0	\$0	\$0	\$2,266	\$2,588	\$2,419	\$2,055
	2010	2011	2012	2013	2014	2015	2016	TOTALS
Discount factors@7.0%	0.58201	0.54393	0.50835	0.47509	0.44401	0.41496	0.38782	
number of plans	13	13	8	9	9	9	9	111
Undiscounted costs (\$1,000)	\$4,290	\$4,290	\$2,640	\$2,970	\$2,970	\$2,970	\$2,970	\$36,630
Discounted costs (\$1,000)	\$2,497	\$2,333	\$1,342	\$1,411	\$1,319	\$1,232	\$1,152	\$20,614